

AMENDMENTS TO SPECIFICATION

Page 1, lines 4-6:

The present invention relates to light guide module of an optical mouse and, more particularly, to a light guide module of ~~the~~an optical mouse having an embedded LED (light emitting diode) with improved characteristics.

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Interior details of a conventional optical mouse are shown in FIG. 1. The optical mouse comprises ~~a~~an LED 4 as light source, an optical module 5 for guiding rays of light to a surface of a table, and an image sensor 7 within the optical mouse for receiving rays of light reflected from the surface. It is seen that the LED 4 is located outside the optical module 5. Also, a clip 6 is provided to fix the LED 4 in a predetermined position so as to substantially bring together rays of light emitted from the LED 4 to the optical module 5.

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However, the prior art suffered from several disadvantages. For example, it can significantly increase the manufacturing cost. Further, there are two transmissions (namely, a first one from a transparent protection member 41 of the LED 4 to air, and a second one from air to the optical module 5) before rays of light can reach the surface or an object. This process has a loss of light of about 12% to about 15%. A solution to compensate the loss of light is ~~by increasing to increase~~ illumination of the LED. However, ~~it the solution~~ may significantly consume power and shorten the useful life of the LED. Hence, a need for the improvement of the light guide module of the optical mouse exists.

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An object of the present invention is to provide a light guide module having an embedded LED so as to increase the efficiency of the light guide, increase illumination, decrease power consumption, and prolong the useful life of the

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Another object of the present invention is to provide a light guide module having an embedded LED having the advantages of a simple light guide mechanism, removal of the conventional clip, easy assembly, and the reduced manufacturing cost.

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To achieve the above and other objects, the present invention provides a light guide module of an optical mouse. The light guide module comprises ~~a~~an LED die; and light guide means including a light guide input, a light guide output, and an optical path between the light guide input and the light guide output, wherein the LED die is disposed in the light guide input of the light guide means, light emitted from the LED die is guided to the light guide output via the optical path, and the light guide input comprises an internal curve surface for impinging light emitted by the LED die and reflected from the curve surface on the light guide output via the optical path.

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With reference to FIG. 2, there is shown a preferred embodiment of the invention. It comprises ~~a~~an LED die 1 and a light guide module 2. The light guide module 2 comprises a light guide input 21, a light guide output 22, and an optical path 23 between the light guide input 21 and the light guide output 22. Hence, input light from the light guide input 21 is adapted to output to the light guide output 22 via the optical path 23. As a result, light is able to impinge on the surface of an object.

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In brief, the LED die is arranged within the light guide module by the invention. Also, the internal surface of the light guide module is a paraboloid for reflecting light emitted from the LED die to the surface of an object via the optical path. The invention thus has the advantages of increasing the efficiency of light guide, increasing illumination, decreasing power

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consumption, prolonging the useful life of the LED, simple light guide mechanism, removal of the conventional clip, easy assembly, and reducing the manufacturing cost.